Weekly Memorials

FOR THE

INGENIOUS:

OR

An Account of Books lately ſet forth in ſeveral Languages, With other Accounts relating to *Arts* and *Sciences*.

Munday, *October* 2. 1682.

Pæonis & Pythagoræ *Exercitationes Anatomicæ, & Medicæ familiares, in* 8*vo*. Baſiliæ. 1682.

THIS curious Tract is a Collection of a hundred Epiſtles written between *Peyer*, and *Harder*, from ſeveral Places of *Europe*, as *Paris*, *Montpelier*, *Geneva*, *Berne*, *Baſil*, *Scaffhauſen*, &c. containing great variety of Obſervations upon ſeveral Subjects; the moſt material of which are,

Firſt, of Stones found in ſeveral Animals, and divers Parts, as in Human Bodies, Hens, Swallows; in Stomachs, Brains, &c. of the Manner, and Cauſes of their Generation, how far *Acidum*, and *Alcali*, Stagnation, Cold, Heat, Relaxation, or Extenſion of the Fibres, and the devouring of calculous Bodies may contribute to it.

Secondly, of the *Renes Succenturiati*, their Juice and Uſe; of the Kidneys, and their ſtructure, of the Ferment of the Heart, the Liquor of the *Pericardium*, whether it comes

comes from the condens'd Vapours of the Heart, or the *Thymus*; from the little Glandules at the *Baſis* of the Heart, or from the *Pericardium* it ſelf, whether it be neceſſary or no, Dr. *Lower* having found it in great variety of Animals, yet *Peyer* could never meet with any *Pericardium* in Hedg-hogs. Here they take occaſion to diſcourſe of the Dropſie of the Heart, giving many Conjectures about it, and confuting Dr. *Willis*.

Thirdly, of ſeveral Uterine Glandules found in wild Goats, of Uterine Ferments, and the Menſtruous Courſes of Women; which Points are controverted with great ſubtilty and Learning, worthy of two ſuch inquiſitive and curious Naturaliſts.

Fourthly, of the Ferments of ſeveral Glandules, as the Liver and Paps, how the Bile and Milk are ſeparated and prepar'd in them; of ſeveral odd Tumours, and ſtrange unexpected Subſtances found in ſeveral Parts of the Body.

Fifthly, there are many Remarks upon the Proſtates of Wild Goats, and thoſe of Women, upon the Seminal Veſicles and Teſticles themſelves, as alſo the Ovaries of Females, and how Generation is perform'd; of which *Monſieur Peyer* writes with ſuch Acuteneſs as might be expected from a man of his indefatigable Induſtry, and extraordinary Parts; yet he aſſures us, that great things may be expected from *Monſieur du Verney* upon this Subject, who intends to raiſe a Hiſtory of Generation out of Eggs, from a great number of Experiments and Obſervations, though the contrary has been intimated in a late Print.

Sixthly, they communicate to each other their Remarks upon Snails, of which *Harder* is about publiſhing a more accurate Treatiſe than that which came forth formerly; and alſo promiſes to write the Hiſtory and Anatomy of *Salmons*. They likewiſe touch ſeveral times upon Rumination,

nation, of which *Peyer* intends to write a moſt Elaborate and exact Hiſtory.

Seventhly, there are many ingenious Obſervations upon the *Lympha*; *Peyer* is of an Opinion, That it is not ſeparated in the Glandules, for the Diaphragm, Muſcles, the firſt Ventricle of Ruminating Animals, and many other Membranous Parts do abound with a *Lympha*, where there is no appearance of any Glands; therefore there is only a Trajection of *Lympha* in them, not any ſeparation; for they receive *Lymphæducts* from other Parts, before they ſend forth any of their own. This *Lymphatic* Liquor is ſaid to be the Reliques of the nutritious Juice, which by reaſon of its Tenuity, could not be agglutinated to the nouriſh'd Parts.

Eighthly, they give us a Deſcription of the Genital Parts of Mules, (in which there is nothing wanting for Generation) of the Organ of Hearing in Fiſhes; the Paſſage of Birds Urine into their Guts: The Glandules found in the Thighs of an extraordinary great Lizard (that frequents the Fields about *Montpelier*) in which Piſmires, Flies, and other Inſects are found entangled. Laſtly, an Account of all the Phyſicians at *Montpelier*, and who are the moſt eminent amongſt them; *Viæſſantius* is reported to be about publiſhing a moſt Exact Hiſtory of the Nerves, which was ſhewn to M. *Peyer* in Manuſcript, and if we may rely upon ſo great a Judge, it will exceed that already put forth by Dr. *Willis*.

Ninthly, there is great variety of other Subjects diſcuſs'd in this Book; as *Polypus*'s, Animals breeding in Plants, Anatomical Remarks made upon a Civet-Cat, the Famous Woman at *Tholouſe*, that bore a *Fætus* 25 years in her Belly, the great Miſchiefs caus'd by Mercurial Unguents, and the Seeds of Meadow-Saffron; that there may be new Paſſages from the Stomach to the *Omentum*, and from thence to the Kidneys, *Volkamer* hath made it very probable. There is

the Hiſtory of a Strangury following a Dyſentery, as likewiſe the Guts found knotted. The reſt being not ſo ſubſtantial, we omit for brevity-ſake.

From the *Journal des Scavans*, ſet forth *January* 19. 1682.
Traité des Couleurs par M. Mariotte *de l' Academie Royale des Sciences, in* 12*mo.* 1681.

HAving in a foregoing Memorial given an Account of the former part of this Book, we now proceed to give the reſt.

This is the ſecond Part of the laſt Eſſay of the Natural Philoſophy of *M. Mariotte*, wherein he explains the Colours which appear through the pure Air, upon luminous or illuminated Bodies; and which are called *fix'd* or *permanent*.

He reckons up five that are the Principal, to wit, *White*, *Black*, *Red*, *Yellow* and *Blew*, the others being eaſily made by the Mixture of ſome of theſe, as *Green* by mixing *Yellow* and *Blew*, and *Violet* Colour by the mixture of *Blew* and *Red*.

He comprehends this whole ſecond Part under 4 different Diſcourſes. In the firſt he treats of Colours that appear in luminous Bodies: He ſaies, That the lively and ſparkling Light of theſe Bodies makes them always appear *White*. Thus he ſhews that the Sun is *White*, after the ſame manner as the greateſt part of the fixed Stars; that all ſprightly Lights appear *White*, ſo caſt Iron and Glaſs being much heated, appear *White*; that groſs Bodies being moderately heated, produce *Red* Flames, as Iron and Earth; and that ſubtile Bodies, as Spirit of Wine, make *Blew* Flames.

In the ſecond Diſcourſe he ſpeaks of *Changeable* Colours which appear upon the ſurfaces of certain Bodies, as the *Opal-Stone*, and the *Mother of Pearl*. He proves, that they are made by Refractions, after the ſame manner as thoſe that appear between two pieces of a Looking-Glaſs, after they

they have been held ſome time one upon the other. He gives the Cauſes of the ſeveral Changes which are ſeen therein, as well as thoſe of the different Colours of Bladders of Soap; and to ſpeak only of the *changeable Colours* of the *Mother of Pearl*, he ſaies, that they proceed from the ſmall Furrows or Wrinkles of their Plates that are laid irregularly one over another, which is plainly ſeen by the help of Microſcopes.

The third Diſcourſe treats at large of *fix'd Colours*, as thoſe that appear in Flowers and Dying. This Author maintains, that they are made without Refraction, only by the Paſſage of the Light through the matter of the Colours, whether it paſſes beyond, as in colour'd Glaſſes; or whether having alittle penetrated the colour'd ſurface, it returns to the Eyes by Reflection, by repaſſing a ſecond time the ſame ſurface.

He explains *White* and *Black* almoſt after the ſame manner, as Mr. *Boyl* and ſeveral other Authors, to wit, that *White* is made when the Light is reflected upon the Surfaces that have an infinite number of ſmall Convex Eminences, as Snow and Froth; and that *Black* is nothing but a Diminution, or entire Privation of Light; whence he infers, that it ought not to be ranked among the Colours.

He compares the matter of the other Colours to that delicate matter that appears upon *Plums* and *Grapes* when they are ripe, and which diſappears when they are touch'd. He ſaies, That this matter is called by the Chymiſts, the Tincture of Bodies; that it can paſs from one Body into another without changing or altering the Contexture and Fibres of their ſolid Parts; That there are ſome of theſe Tinctures that eaſily evaporate, whereof he gives us ſeveral Examples, among others, of the *Coral* that loſes its *Redneſs* being put near the Fire, or when it is ſteep'd for ſome time in the Juice of *Lemmon*; That there are ſome others which reſiſt a great fire, as the *Yellow Tincture* of *Gold*, and the *Blew* of the *Lapis Lazuli*.

He

He ſaies, that there are two different Orders in the Colours to paſs from *White* to *Black*, to wit, on one ſide, the *White*, *Yellow*, *Red* and *Black*; on the other ſide, the *White*, *Blew*, *Violet*, and *Black*; That Glaſs-Priſms make theſe two Orders appear by Refractions, the firſt in the Convexities of the Incurvations of Light, and the ſecond in their Concavities; That the two Principles which the Chymiſts call *Acid* and *Alcali*, do likewiſe diſtinguiſh theſe two Orders, the *Acid* turneth the *Black*, *Blew*, and *Purple*, into *Red*, the *Red* into *Yellow*, and the *Yellow* into a *Pale-Yellow*. On the contrary, the *Alcali* commonly changes *Red* into *Violet*, and *Yellow* into a *Feüille-morte* Colour.

He explains theſe Changes by the *Diſſolutions* and *Precipitations* of the matter that produces Colours; of which he gives us ſeveral Curious Examples, among others, That the Water wherein the Gall-Nut hath been boyl'd, which hath a great deal of *Alcali*, cauſes the *Vitriol* to loſe that *ferruginous* Matter, which its Spirit keeps diſſolv'd, and thickning it by *Precipitation* cauſes the *Blackneſs* of the *Ink*; That if the Spirit of *Allom*, *Vitriol*, or any other very ſtrong *Acid* be pour'd upon this *Ink*, it preſently becomes clear like fair Water, becauſe theſe *Acid* Spirits do diſſolve anew the *ferruginous* Matter; and afterwards, if ſome *Alcali* be again put in, as a little *Chalk*, though very *White*, the Liquor reſumes its *Blackneſs* by a new *Precipitation*.

He ſhews, that by the ſame Cauſes, *Acids* turn the *Red* of *Braſil* and *Indian-wood*, into *Yellow*, and make *Woad* and *Fuſtick-wood* loſe its *Yellow* Colour; and that *Alkalies* do reſtore a *Red-Violet* Colour to the Tincture of *Braſil* and *Indian-wood*, after being turn'd *Yellow* by *Acids*. He makes uſe of theſe *Hypotheſes* to explain how it comes to paſs, that the Juice of *Lemmon*, and moſt other *Acids* do change *Green* into *Blew*, and the Spirit of *Salt-petre* changes it into a *Feüille-morte*.

He

He applies theſe ſame *Hypotheſes* to the Tinctures of *Stuffs* and *Glaſſes*. And he proves, that the faireſt *Rubies* of the *Eaſt*, and the beſt *Emeralds* muſt needs loſe all the Luſtre and Vivacity of their Colours, when one of their Surfaces is made to touch never ſo little the ſuperior Surface of *Water* put into a Veſſel, and that they recover their former Beauty when they touch the Water no longer.

Laſtly, in his fourth Diſcourſe he explains ſome Appearances of Colours that are made by *Impreſſions*, which remain in the Eyes, after having ſeen ſtrong Lights.

From the *Journal de Scavans* ſet forth *July* 20. 1682.

Reflexions ſur quelques Machines à elever les Eaux avec la Deſcription d' une nouvelle Pompe ſans frottement & ſans piſton, & le moyen de faire des jets d' Eau de la derniere hauteur, ſans avoir beſoin de reſervoirs elevez. A Paris, 1682.

THIS Diſcourſe is an *Examen* of the Machine for raiſing Water, of which we gave an Account in a preceding Memorial, and of a Book entituled *Experience Juſtifi'd*.

Monſ. de Hautefeuille maintains, That the Excellency of Inventions conſiſts in the Imitation of Nature; that Art is never more perfect, than when it approaches neareſt to it; and that in imitating Nature we may out-do it, as it appears by Teleſcopes, Microſcopes, &c. He brings all theſe Examples with ſome other Inventions, wherein he hath imitated Nature, as that of Reſpiration under Water, the way of keeping Flame inclos'd in a narrow place, and that which he hath contrived for perfecting the Senſe of Hearing, which he promiſes to publiſh in a Treatiſe which he is now a compoſing, and will be entituled, *The Perfection of the Senſe of Hearing compared with that of Seeing*.

So that according to his Opinion, all the Induſtry of thoſe that apply themſelves to the finding out new Inventions, ought to be wholly employ'd in examining, whether Nature produces Effects like to thoſe which they ſearch into, and to imitate her as perfectly as is poſſible. He ſaies, That

That the ordinary Pumps are not natural in all their Parts becauſe the Cylinder which cauſes a violent Rubbing, and requires the greateſt Part of the force, for its Motion hath no Model in Nature, ſince the Whale which caſts up Water ſo high, and in ſo great abundance, produces this Effect without a Cylinder, as well as the Heart of all Animals, which is a true Pump without any Cylinder or Rubbing.

For the making therefore of Pumps moſt perfect, he would have their Conſtruction imitate, as much as is poſſible, the Structure of the Heart and Fibres, which are turn'd with ſpiral Lines, or that of the Wind-pipe and its bony Circles, which he hath experimented in little by twiſting of Iron ſpirally, or by placing Copper-Rings very cloſe to one another on a Pipe made of Leather, impenetrable by Water, which he hath covered with another Leather adapted to the extremity of two Tin-pipes, with a *Diaphragm* pierced in the middle, and ſtop'd with a Sucker. This *Diaphragm* being elevated and depreſſed by the help of two wreaths which go out of it, and of a Lever apply'd to it, raiſes the water without rubbing, and without a Cylinder.

The manner of making Water-Works of the greateſt height without making uſe of elevated Ciſterns, is by the means of an exceeding ſtrong Veſſel into which the Water may be let in with a great force, which preſſing the Air that is ſhut up in it, it forces the Water and makes it ſpout up through the Pipe which is ſo much the higher, by how much the Compreſſion of the Air is ſtronger. Several Authors have propoſed this way above mentioned, for the raiſing of Water in Fires, in which it is very uſeful. And as in this Invention there is no need of elevated Ciſterns of Aſcending and Deſcending Pipes, it will ſave a great deal of Charge to them that would have ordinary Water-Engines, and particularly to them that have the Convenience of Brooks and Rivers.

We have given the Figure and full Deſcription of one of theſe Engines *for Fires in the* 23. Journal *of the year* 1675. *which is likewiſe Tranſlated into* Engliſh, *Numb.* 128. *of the Philoſophical Tranſactions.*

London: Printed for *Henry Eatthorne* and *John Kerſey*, and ſold at their Shop, at the *Roſe* in St. *Pauls Church-yard*; and by *W. Nott* in the *Pall-Mall*, *C. Wilkinſon* againſt St. *Dunſtan's*-Church in *Fleetſtreet*, *B. Billingſly* at the Royal-Exchange in *Cornhil*, and *M. Pardoe* againſt *Bedford-houſe* in the *Strand*.